WHAT IS CLAIMED IS:

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1. A process for preparing a product comprising
2 branched olefins, said process comprising:

hydrocracking and hydroisomerizing a paraffinic wax isoparaffinic composition produce an to or less quaternary carbon comprising 0.5% isoparaffinic composition said atoms, comprising paraffins having a carbon number of from about 7 to about 18, at least a portion of paraffins being branched paraffins said comprising an average number of branches per paraffin molecule of at least 0.5, branches comprising a first number of methyl branches and optionally a second number of ethyl branches;

exposing said isoparaffinic composition to a dehydrogenation catalyst in an amount and under dehydrogenation conditions effective to dehydrogenate said branched paraffins and to produce said branched olefins comprising 0.5% or less quaternary aliphatic carbon atoms.

- 2. The process of claim 1 wherein said isoparaffinic composition and said branched olefins comprise 0.3% or less quaternary aliphatic carbon atoms.
- The process of claim 1 wherein said isoparaffinic composition comprises at least about 50 %w of said branched paraffins.
- 1 4. The process of claim 1 wherein at least 75 %w of said branched paraffins comprise a range of molecules of which the heaviest molecules comprises at most 6 carbon atoms more than the lightest molecules.
- 5. The process of claim 1 wherein at least 90 %w of said branched paraffins comprise a range of molecules

- of which the heaviest molecules comprises at most 6 carbon atoms more than the lightest molecules.
- 6. The process of claim t wherein said paraffins have a carbon number in the range of from 7 to 35.
- 7. The process of claim 1 wherein at least 75%w of said isoparaffinic composition consists of paraffins having a carbon number in the range of from 10 to 18.
- 8. The process of claim 1/wherein at least 90 w% of said isoparaffinic composition consists of paraffins having a carbon number in the range of from 10 to 18.
- 9. The process of claim 1 wherein at least 75%w of said isoparaffinic composition consists of paraffins having a carbon number in the range of from 11 to 14.
- 10. The process of claim 1/wherein at least 90%w of said isoparaffinic composition consists of paraffins having a carbon number in the range of from 11 to 14.
- 11. The process of claim 1 wherein said average number of branches is at least 0.7.
- 1 12. The process of claim χ wherein said average number of branches is at most 2.0.
- 1 13. The process of claim 1 wherein said average 2 number of branches is at most 1.8.
- 1 14. The process of claim 1 wherein said average 2 number of branches is at most 1.4.
- 15. The process of claim /1 wherein said first number of methyl branches is at least 50%.
- 16. The process of claim 1 wherein said second number of ethyl branches is at most 10%.
- 17. A process for preparing a product comprising 2 branched olefins, said process comprising:
- hydrocracking and hydroisomerizing a paraffinic wax to produce an isoparaffinic composition comprising less than 0.5% quaternary aliphatic carbon atoms, said isoparaffinic composition

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comprising paraffins having a carbon number of from about 7 to about 18, at least a portion of paraffins said being branched paraffins comprising an average number of branches per molecule paraffin of at least 0.5, said branches comprising a first number of methyl branches and optionally a second number of ethyl branches; and,

exposing said isoparaffinic composition to a dehydrogenation catalyst in an amount and under dehydrogenation conditions effective to dehydrogenate said branched paraffins and to produce said branched olefins comprising less than 0.5% quaternary aliphatic carbon atoms.

- 18. The claim 1 process of wherein said isoparaffinic composition and 2 said branched olefins comprise 0.3% or less quaternary aliphatic carbon atoms.
- of .claim / 1 19. 1 The process wherein said isoparaffinic composition comprises at least about 50 %w 2 of said branched paraffins. 3
- 20. claim / 1 1 The process of wherein said isoparaffinic composition comprises at most 10%w linear 2 paraffins. 3
- The 21. 1 of claim / 1 wherein process isoparaffinic composition comprises at most 5%w linear paraffins.
- 22. 1 The process of claim / 1 wherein isoparaffinic composition is produced by a Fischer 2 Tropsch process. 3
- 23. The 1 process of claim / 1 wherein isoparaffinic composition is obtained from an ethylene 2 oligomerization process. 3
- 24. 1 The of claim , 1 wherein process isoparaffinic composition is treated with an absorbent 2

- 3 under conditions effective to perform a function selected
- 4 from the group consisting of reducing linear paraffin
- 5 content, favorably adjusting said average number of
- 6 branches, and a combination thereof.
- 1 25. The process of claim 1 wherein said
- 2 dehydrogenation catalyst comprises a quantity of metal or
- 3 metal compound selected from the group consisting of
- 4 chrome oxide, iron oxide and, noble metals.
- 1 26. The process of claim 1 wherein said
- 2 dehydrogenation catalyst comprises a quantity of noble
- 3 metal selected from the group consisting of platinum,
- 4 palladium, iridium, ruthenium, osmium and rhodium.
- 1 27. The process of claim 1 wherein said
- 2 dehydrogenation catalyst comprises a quantity of noble
- 3 metal selected from the group consisting of palladium and
- 4 platinum.
- 1 28. The process of claim 1 wherein said
- 2 dehydrogenation catalyst comprises a quantity of
- 3 platinum.
- 1 29. The process of claim 25 wherein said
- 2 dehydrogenation catalyst further comprises a porous
- 3 support selected from the group consisting of activated
- 4 carbon; coke; charcoal; silica; silica gel; synthetic
- 5 clays; and silicates.
- 1 30. The process of claim 25 wherein said
- 2 dehydrogenation catalyst further comprises a porous
- 3 support selected from the group consisting of gamma
- 4 alumina or eta alumina.
- 1 31. The process of claim 25 where said quantity of
- 2 metal or metal compound is from about 0.01 to 5%w based
- 3 on the weight of the catalyst.
- 1 32. The process of claim /26 wherein said catalyst
- 2 further comprises from about 0.01 to about 5%w of one or
- 3 more metals selected from the group consisting of Group

- 4 3a, Group 4a and Group 5a of the Periodic Table of 5 Elements.
- 1 33. The process of claim 26 wherein said catalyst
- 2 further comprises from about 0.01 to about 5%w of one or
- 3 more metals selected from the group consisting of alkali
- 4 earth metals and alkaline earth metals.
- 1 34. The process of claim 26 wherein said catalyst
- 2 further comprises from about 0.01 to about 5%w of one or
- 3 more metals selected from the group consisting of indium,
- 4 tin, bismuth, potassium, and lithium.
- 1 35. The process of claim 26 wherein said catalyst
- 2 further comprises from about 0.01 to about 5%w of one or
- 3 more halogens.
- 1 36. The process of claim 26 wherein said catalyst
- 2 further comprises from about 0.01 to about 5%w
- 3 independently of tin and chlorine.
- 1 37. The process of claim'l wherein said catalyst is
- 2 selected from the group consisting of chrome oxide on
- 3 gamma alumina, platinum on gamma alumina, palladium on
- 4 gamma alumina, platinum/lithium on gamma alumina,
- 5 platinum/potassium on gamma alumina, platinum/tin on
- 6 gamma alumina, platinum/tin on hydrotalcite,
- 7 platinum/indium on gamma alumina and platinum/bismuth on
- 8 gamma alumina.
- 1 38. The process of claim 1 wherein said
- 2 dehyrogenation conditions comprise a temperature of from
- 3 about 300°C to about 700 °C. and a pressure of from about
- 4 1.1 to 15 bar absolute.
- 1 39. The process of claim 1 wherein hydrogen is fed
- 2 to said dehydrogenation catalyst with said isoparaffinic
- 3 composition.
- 1 40. The process of claim 39 wherein said hydrogen
- 2 and said paraffins are fed at a molar ratio of from about
- 3 0.1 to about 20.

- The 1 41. claim process of wherein 1 said dehyrogenation conditions 2 comprise a residence time effective to 3 maintain a conversion level of said isoparaffinic composition below about 50 mole%. 4
- 1 42. The process of claim 1 wherein said branched 2 olefins comprise non-converted paraffins and said process 3 further comprises separating said non-converted paraffins 4 from said branched olefin product and recycling said non-5 converted paraffins to said dehydrogenation catalyst.
- 1 43. The process of claim 42/wherein said separating 2 comprises exposing said product comprising non-converted 3 paraffins to molecular sieves.
- 1 44. The process of claim 43 wherein said molecular 2 sieves are zeolites.
- 45. The process of claim 1 wherein said branched olefin product comprises from about 1 to about 50% mole olefins relative to the total number of moles of olefins and paraffins present.
- 46. The process of claim 1 wherein said branched olefin product comprises from about 10 to about 20% mole olefins relative to the total number of moles of olefins and paraffins present in said product.
- 1 47. A process for preparing branched alkyl aromatic 2 hydrocarbons comprising:

hydrocracking and hydroisomerizing a paraffinic wax 3 4 produce to isoparaffinic an composition comprising 0.5% 5 or less quaternary carbon 6 atoms, isoparaffinic said composition comprising paraffins having a carbon number of 7 from about 7 to about 18, at least a portion of 8 9 said paraffins being branched paraffins 10 comprising an average number of branches per paraffin molecule of at least 0.5, said 11 branches comprising a first number of methyl 12

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14	ethyl bra	nches	;				

- exposing said isoparaffinic composition to a dehydrogenation catalyst in an amount and under dehydrogenation conditions effective to dehydrogenate said branched paraffins and to produce a mixture comprising branched olefins comprising 0.5% or less quaternary carbon atoms and non-converted paraffins;
- contacting said branched olefins with an aromatic hydrocarbon in the presence of a quantity of an alkylation catalyst under alkylation conditions effective to alkylate said aromatic hydrocarbon, producing said branched alkyl aromatic hydrocarbons.
- 48. The process of claim 47 wherein said aromatice hydrocarbon is selected from the group consisting of one or more of benzenes, toluenes, xylenes, and naphthalenes.
- 1 49. A process as claimed in claim, 47 wherein said 2 aromatic hydrocarbon is benzene.
- 50. The process of claim 47 wherein said alkylation conditions are effective to predominately monoalkylate said aromatic hydrocarbon.
- 51. The process of claim 47 wherein said alkylation conditions comprise a molar ratio of said branched olefins to said aromatic hydrocarbons of at least about 0.5.
- 52. The process of claim 47 wherein said alkylation conditions comprise a molar ratio of said branched olefins to said aromatic hydrocarbons of at least about 1.
- 1 53. The process of claim 47 wherein said alkylation 2 conditions comprise a molar ratio of said branched

- olefins to said aromatic hydrocarbons of at least about 1.5.
- 1 54. The process of claim 47 wherein said conditions
- 2 comprise a liquid diluent selected from the group
- 3 consisting of an excess of said aromatic hydrocarbon and
- 4 paraffin mixtures having a boiling range substantially
- 5 the same as said non-converted paraffins.
- 1 55. The process of claim 47 wherein said alkylation
- 2 catalyst is selected from the group consisting of
- 3 zeolites comprising pores having pore size dimensions of
- 4 from about 4 to about 9 Å.
- 1 56. The process of claim 55 wherein said alkylation
- 2 catalyst comprises one or more zeolites in acidic form
- 3 selected from the group consisting of zeolite Y, ZSM-5,
- 4 ZSM-11, and zeolites having an NES zeolite structure
- 5 type.
- 57. The process of claim /55 wherein said alkylation
- 2 catalyst comprises one or more zeolites in acidic form
- 3 selected from the group consisting of mordenite, ZSM-4,
- 4 ZSM-12, ZSM-20, offretite, gemelinite and cancrinite.
- 1 58. The process of claim 55 wherein said alkylation
- 2 catalyst comprises one or more zeolites having an
- 3 isotypic framework structure selected from the group
- 4 consisting of NU-87 and gottardiite.
- 1 59. The process of claim 55 wherein said zeolites
- 2 have a framework molar ratio of Si to Al of from about
- 3 5:1 to about 100:1.
- 1 60. The process of claim 55 wherein said zeolite
- 2 has said NES zeolite structure type and comprises a
- 3 framework molar ratio of Si to Al of from about 5:1 to
- 4 about 25:1.
- 1 61. The process of claim 60 wherein said framework
- 2 molar ratio is from about 10:1 to about 20:1.

- 1 62. The process of claim 55 wherein said zeolites 2 comprise cationic sites, at least a portion of said 3 cationic sites being occupied by replacing ions selected 4 from the group other than alkali metal ions and alkaline 5 earth metal ions.
- 1 63. The process of claim 62 wherein said replacing 2 ions are selected from the group consisting of ammonium, 3 hydrogen, rare earth metals, and combinations thereof.
- 1 64. The process of claim 62 wherein at least 50% of cationic sites on said zeolites are in hydrogen form.
- 1 65: The process of claim 62 wherein at least 90% of cationic sites on said zeolites are in hydrogen form.
- 1 66. The process of claim 55 wherein said alkylation 2 catalyst comprises pellets comprising at least 50 %w, of 3 said zeolite.
- 1 67. The process of claim 47 wherein said quantity 2 of said alkylation catalyst is from about 1 to about 50%w 3 relative to the weight of said branched olefins in said 4 mixture.
- 1 68. The process of claim 47 wherein said alkylation 2 conditions comprise a reaction temperature of from about 3 30°C to about 300 °C.
- The process of claim 47 wherein said isoparaffinic composition comprises at least about 50 %w of said branched paraffins.
- 1 70. The process of claim 47 wherein said first number of methyl branches is at least about 50% of said branches.
- 71. The process of claim A7 wherein at least 75 %w of said branched paraffins represent a range of molecules of which the heaviest molecules comprise at most 6 carbon atoms more than the lightest molecules.

- 72. The process of claim 47 wherein said isoparaffinic composition comprises paraffins having a carbon number in the range of from 7 to 35.
- 73. The process of claim 47 wherein at least 75%w of said isoparaffinic composition consists of paraffins having a carbon number in the range of from 10 to 18.
- 74. The process of claim 47 wherein at least 75%w of said isoparaffinic composition consists of paraffins having a carbon number in the range of from 11 to 14.
- 75. The process of claim 4,7- wherein said average number of branches is at least 0.7.
- 76. The process of claim 47 wherein said average number of branches is at most 2.0.
- 77. The process of claim 47 wherein said average number of branches is at most 1.8.
- 78. The process of claim 47 wherein said first number of methyl branches is at least 50% of said branches.
- 79. A process for preparing branched alkyl aromatic hydrocarbons comprising:

hydrocracking and hydroisomerizing a paraffinic wax 3 produce isoparaffinic composition 4 an comprising 0.5% or less quaternary aliphatic 5 carbon atoms, said isoparaffinic composition 6 comprising paraffins having a carbon number of 7 from about 7 to about 18, at least a portion of 8 9 said paraffins being branched paraffins comprising an average number of branches per 10 paraffin molecule of at 11 least 0.5, said branches comprising a first number of methyl 12 branches and optionally a second number of 13 ethyl branches; 14

exposing said isoparaffinic composition to a dehydrogenation catalyst in an amount and under

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17 dehydrogenation conditions effective to dehydrogenate said branched paraffins and to 18 mixture comprising 19 produce unconverted a paraffins and branched olefins comprising 0.5% 20 or less quaternary aliphatic carbon atoms; and 21 contacting said branched olefins with an aromatic 22 hydrocarbon in the presence of a quantity of an 23 alkylation catalyst under alkylation conditions 24 25 effective alkylate to said aromatic hydrocarbon, producing said branched 26 aromatic hydrocarbons. 27

- 80. The process of claim 79 wherein 0.3% or less of carbon atoms present in said isoparaffinic composition comprise quaternary aliphatic carbon atoms.
- 1 81. The process of claim 79 wherein at least 50 %w 2 of said isoparaffinic composition is said branched 3 paraffins.
- 1 82. The process of claim 79 wherein at most 10 %w 2 of said isoparaffinic composition is said linear 3 paraffins.
- 1 83. The process of claim 79 wherein at most 5 %w of 2 said isoparaffinic composition is said linear paraffins.
- 1 84. The process of claim 79 wherein at most 1 %w of 2 said isoparaffinic composition is said linear paraffins.
- 1 85. The process of claim 79 wherein said 2 isoparaffinic composition is produced by a Fischer 3 Tropsch process.
- 86. The process of claim 79 wherein 1 said isoparaffinic composition is treated with an absorbent 2 conditions effective to perform a 3 under absorbent function selected from the group consisting of lowering 4 linear paraffin content, favorably adjusting said average 5 number of branches, and a combination thereof. 6

- 1 87. The process of claim, 86 wherein said absorbent 2 is a zeolite.
- 1 88. The process of claim 79 wherein said
- 2 dehydrogenation catalyst comprises a quantity of metal or
- 3 metal compound selected from the group consisting of
- 4 chrome oxide, iron oxide and, noble metals.
- 1 89. The process of claim 88 wherein said
- 2 dehydrogenation catalyst comprises a quantity of noble
- 3 metal selected from the group consisting of platinum,
- 4 palladium, iridium, ruthenium, osmium and rhodium.
- 1 90. The process of claim 88 wherein said
- 2 dehydrogenation catalyst comprises a quantity of noble
- 3 metal selected from the group consisting of palladium and
- 4 platinum.
- 1 91. The process of claim 88 wherein said
- 2 dehydrogenation catalyst comprises a quantity of
- 3 platinum.
- 92. The process of claim 8,8 wherein said catalyst
- 2 further comprises a porous support selected from the
- 3 group consisting of gamma alumina or eta alumina.
- 1 93. The process of claim 878 where said quantity of
- 2 metal is from about 0.01 to about 5%w based on the weight
- 3 of said dehydrogenation catalyst.
- 1 94. The process of claim 89 wherein said
- 2 dehyrogenation catalyst further comprises from about 0.01
- 3 to about 5%w of one or more metals selected from the
- 4 group consisting of Group 3a, Group 4a and Group 5a of
- 5 the Periodic Table of Elements.
- 1 95. The process of claim 89 wherein said
- 2 dehyrogenation catalyst further comprises from about 0.01
- 3 to about 5%w of one or more metals selected from the
- 4 group consisting of alkali earth metals and alkaline
- 5 earth metals.

- 1 96. The process of claim 89 wherein said
- 2 dehyrogenation catalyst further comprises from about 0.01
- 3 to about 5%w of one or more metals selected from the
- 4 group consisting of indium, tin, bismuth, potassium, and
- 5 lithium.
- 1 97. The process of claim / 89 wherein said
- 2 dehyrogenation catalyst further comprises from about 0.01
- 3 to about 5%w of one or more halogens.
- 1 98. The process of claim /89 wherein said
- 2 dehyrogenation catalyst comprises from about 0.01 to
- 3 about 5%w independently of tin and chlorine.
- 1 99. The process of claim 179 wherein said
- 2 dehyrogenation catalyst is selected from the group
- 3 consisting of chrome oxide on gamma alumina, platinum on
- 4 gamma alumina, palladium on gamma alumina,
- 5 platinum/lithium on gamma alumina, platinum/potassium on
- 6 gamma alumina, platinum/tin on gamma alumina,
- 7 platinum/tin on hydrotalcite, platinum/indium on gamma
- 8 alumina and platinum/bismuth on gamma alumina.
- 1 100. The process of claim , 79 wherein said
- 2 dehydrogenation conditions comprise a temperature of from
- 3 about 300°C to about 700 °C. and a pressure of from about
- 4 1.1 to 15 bar absolute.
- 101. The process of claim 79 wherein hydrogen is fed
- 2 to said dehydrogenation catalyst with said isoparaffinic
- 3 composition.
- 1 102. The process of claim 101 wherein said hydrogen
- 2 and said paraffins are fed at a molar ratio of from about
- 3 0.1 to about 20.
- 1 103. The process of claim/ 79 wherein said
- 2 dehydrogenation conditions comprise a residence time
- 3 effective to maintain a conversion level of said
- 4 isoparaffinic composition of about 50 mole% or less.

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104. The process of claim 79 further comprising 2 separating non-converted paraffins from said product and 3 recycling said non-converted paraffins to said 4 dehydrogenation catalyst.

105. The process of claim 19 wherein said product comprises from about 50% mole or less olefins relative to the total number of moles of olefins and paraffins in said product.

1 106. A process for preparing (branched-alkyl) 2 arylsulfonates comprising:

hydrocracking and hydroisomerizing a paraffinic wax to produce isoparaffinic an composition comprising 0.5% less quaternary carbon or said atoms, isoparaffinic composition comprising paraffins having a carbon number of from about 7 to about 18, at least a portion of paraffins being said branched paraffins comprising an average number of branches per paraffin molecule of at least 0.5, branches comprising a first number of methyl branches and optionally a second number of ethyl branches;

exposing isoparaffinic said composition to a dehydrogenation catalyst in an amount and under dehydrogenation conditions effective to dehydrogenate said branched paraffins and to produce a mixture comprising branched olefins and unconverted paraffins, said branched olefins comprising 0.5% or less quaternary carbon atoms;

contacting said branched olefins with an aromatic hydrocarbon in the presence of a quantity of an alkylation catalyst under alkylation conditions effective to alkylate said aromatic

- hydrocarbon, producing branched alkyl aromatic hydrocarbons comprising 0.5% or less quaternary carbon atoms;
- sulfonating said branched alkyl aromatic hydrocarbons.
- 1 107. The process of claim 106 wherein said aromatic 2 hydrocarbon is selected from the group consisting of one 3 or more of benzenes, toluenes, xylenes, and naphthalenes.
- 1 108. The process of claim 106 wherein said aromatic hydrocarbon is benzene.
- 109. The process of claim 106 wherein said 2 alkylation conditions are effective to predominately 3 monoalkylate said aromatic hydrocarbon.
- 1 110. The process of claim 106 wherein said 2 alkylation catalyst is selected from the group consisting 3 of zeolites comprising pores having pore size dimensions 4 of from about 4 to about 9 Å.
- claim 111. The process of 1 106 wherein said alkylation catalyst comprises one or more zeolites in 2 acidic form selected from the group consisting of zeolite 3 Y, ZSM-5, ZSM-11, mordenite, ZSM-4, ZSM-12, ZSM-20, 4 offretite, gemelinite, cancrinite, and zeolites having an 5 NES zeolite structure type.
- 1 112. The process of claim 1/06 wherein alkylation 2 catalyst is a zeolite having an isotypic framework 3 structure selected from the group consisting of NU-87 and 4 gottardiite.
- 1 113. The process of claim 110 wherein said zeolites 2 have a framework molar ratio of Si to Al of from about 3 5:1 to about 100:1.
- 114. The process of claim 11/1 wherein said zeolite 2 has said NES zeolite structure type and has a framework 3 molar ratio of Si to Al of from about 5:1 to about 25:1.

- 1 115. The process of claim 110 wherein said zeolites
- 2 comprise cationic sites, at least a portion of said
- 3 cationic sites being occupied by replacing ions selected
- 4 from the group other than alkali metal ions and alkaline
- 5 earth metal ions.
- 1 116. The process of claim 1/15 wherein said replacing
- 2 ions are selected from the group consisting of ammonium,
- 3 hydrogen, rare earth metals, and combinations thereof.
- 1 117. The process of claim 1/25 wherein at least 50%
- 2 of cationic sites on said zeolites are in hydrogen form.
- 1 118. The process of claim 115 wherein at least 90%
- 2 of cationic sites on said zeolites are in hydrogen form.
- 1 119. The process of claim 110 wherein said
- 2 alkylation catalyst comprises pellets comprising at least
- 3 50 %w of said zeolite.
- 1 120. The process of claim 1/06 wherein said quantity
- 2 of said alkylation catalyst is from about 1 to about 50%w
- 3 relative to the weight of said branched olefins in said
- 4 mixture.
- 1 121. The process of claim 106 wherein said
- 2 isoparaffinic composition comprises at least about 50 %w
- 3 branched paraffins.
- 1 122. The process of claim 1/06 wherein said first
- 2 number is at least about 50% of said branches.
- 1 123. The process of claim 10% wherein at least 75 %w
- 2 of said branched paraffins in said isoparaffinic
- 3 composition represent a range of molecules of which the
- 4 heaviest molecules comprises at most 6 carbon atoms more
- 5 than the lightest molecules.
- 1 124. The process of claim 106 wherein said
- 2 isoparaffinic composition comprises paraffins having a
- 3 carbon number in the range of from 7 to 35.

1	125. The process of claim 106 wherein at least 75%w
2	of said isoparaffinic composition consists of paraffins
3	having a carbon number in the range of from 10 to 18

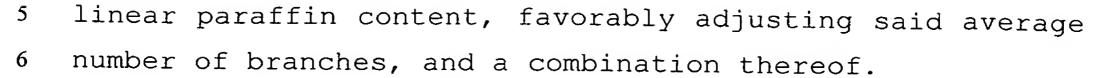
- 1 126. The process of claim 106 wherein at least 75%w 2 of said isoparaffinic composition consists of paraffins 3 having a carbon number in the range of from 11 to 14.
- 1 127. The process of claim 106 wherein said average number of branches is at least 0.7.
- 1 128. The process of claim 106 wherein said average 2 number of branches is at most 2.0.
- 1 129. The process of claim 1/06 wherein said average number of branches is at most 1.8.
 - 130. The process of claim 106 wherein said first number of methyl branches is at least 50% of said branches.
- 1 131. The process of claim 106 wherein said second 2 number of ethyl branches is at most 10% of said branches.
 - 132. A process for preparing (branched-alkyl) arylsulfonates comprising:

hydrocracking and hydroisomerizing a paraffinic wax 3 produce to isoparaffinic an composition 5 comprising 0.5% or less quaternary aliphatic carbon atoms, said isoparaffinic composition 6 7 comprising paraffins having a carbon number of from about 7 to about 18, at least a portion of 8 9 said paraffins being branched paraffins 10 comprising an average number of branches per paraffin molecule of at 11 least 0.5, branches comprising a first number of methyl 12 branches and optionally a second number of 13 14 ethyl branches;

exposing said isoparaffinic composition to a dehydrogenation catalyst in an amount and under dehydrogenation conditions effective to

18	dehydrogenate said branched paraffins and to
19	produce a mixture comprising branched olefing
20	and unconverted paraffins, said branched
21	olefins comprising 0.5% or less quaternary
22	aliphatic carbon atoms;
23	contacting said branched olefins with an aromatic
24	hydrocarbon in the presence of a quantity of an
25	alkylation catalyst under alkylation conditions
26	effective to alkylate said aromatic
27	hydrocarbon, producing branched alkyl aromatic
28	hydrocarbons comprising 0.5% or less quaternary
29	aliphatic carbon atoms;
30	sulfonating said branched alkyl aromatic
31	hydrocarbons.
1	133. The process of claim 132 wherein 0.3% or less
2 .	of carbon atoms present in said isoparaffinic composition
3	comprise quaternary aliphatic carbon atoms.
1 .	134. The process of claim 132 wherein said
2	isoparaffinic composition is at least 50%w said branched
3	paraffins.
1	135. The process of claim $13\frac{1}{2}$ wherein the said
2	isoparaffinic composition is at most 5%w linear
3	paraffins.
1	136. The process of claim 132 wherein said
2	isoparaffinic composition is at most 1%w linear
3	paraffins.
1	137. The process of claim 13/2 wherein said

- 2 isoparaffinic composition is produced by a Fischer
- 3 Tropsch process.
- 1 138. The process of claim 132 wherein said
- 2 isoparaffinic composition is treated with an absorbent
- 3 under absorbent conditions effective to perform a
- 4 function selected from the group consisting of reducing



- 1 139. The process of claim 132 wherein said 2 dehydrogenation catalyst comprises a quantity of metal or 3 metal compound selected from the group consisting of 4 chrome oxide, iron oxide and, noble metals.
- 1 140. The process of claim 132 wherein said 2 dehydrogenation catalyst comprises a quantity of noble 3 metal selected from the group consisting of palladium and 4 platinum.
- 1 141. The process of claim 13% wherein said 2 dehydrogenation catalyst comprises a quantity of 3 platinum.
- 142. The 1 process of claim 13/9 wherein said dehydrogenation catalyst comprises 2 porous a support selected from the group consisting of gamma alumina or 3 eta alumina.
- 1 143. The process of claim 139 where said quantity of metal is from about 0.01 to about 5%w based on the weight of said dehydrogenation catalyst.
- 1 144. The process of claim 139 wherein said metal or 2 metal compound is a noble metal and said dehyrogenation 3 catalyst further comprises from about 0.01 to about 5%w 4 of one or more metals selected from the group consisting 5 of Group 3a, Group 4a and Group 5a of the Periodic Table 6 of Elements.
- 1 145. The process of claim 139 wherein said metal or 2 metal compound is a noble metal and said dehyrogenation 3 catalyst further comprises from about 0.01 to about 5%w 4 of one or more metals selected from the group consisting 5 of alkali earth metals and alkaline earth metals.
- 146. The process of claim 139 wherein said metal or 2 metal compound is a noble metal and said dehyrogenation

- 3 catalyst comprises from about 0.01 to about 5%w 4 independently of tin and chlorine.
- 1 147. The process of claim 132 wherein said
- 2 dehyrogenation catalyst is selected from the group
- 3 consisting of chrome oxide on gamma alumina, platinum on
- 4 gamma alumina, palladium on gamma alumina,
- 5 platinum/lithium on gamma alumina, platinum/potassium on
- 6 gamma alumina, platinum/tin on gamma alumina,
- 7 platinum/tin on hydrotalcite, platinum/indium on gamma
- 8 alumina and platinum/bismuth on gamma alumina.
- 148. The process of claim 132 wherein hydrogen and
- 2 said isoparaffinic composition are fed to said
- 3 dehydrogenation catalyst at a molar ratio of from about
- 4 0.1 to about 20.
- 1 149. The process of claim 1/132 wherein said
- 2 dehydrogenation conditions comprise a residence time
- 3 effective to maintain a conversion level of said
- 4 isoparaffinic composition below 50 mole%.
- 1 150. The process of claim 132 further comprising
- 2 separating non-converted paraffins from said product and
- 3 recycling said non-converted paraffins to said
- 4 dehydrogenation catalyst.
- 1 151. The process of claim 132 wherein said process
- 2 produces a product comprising from about 5 to about 30%
- 3 mole olefins relative to the total number of moles of
- 4 olefins and paraffins in said product.
- 1 152. A branched olefin composition made by the
- 2 process of claim 1/
- 1 153. A branched alkyl aromatic hydrocarbon
- 2 composition made by the process of claim 47.
- 1 154. A (branched-alkyl)arylsulfonate composition
- 2 made by the process of claim 132.